



THE ARITHMETICAL PRIMER  
OR

UNDERHILL'S NEW

Table Book

BY

DANIEL C. UNDERHILL

*A New Edition.*

ANDERSON SC.

NEW YORK:

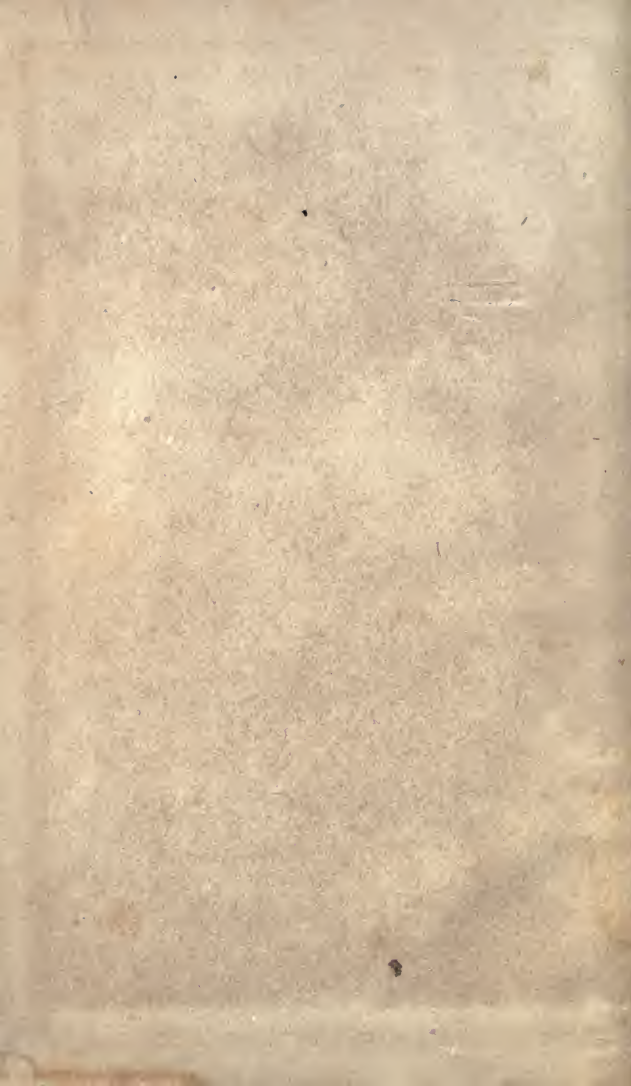
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THE ARITHMETICAL PRIMER.

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UNDERHILL'S  
NEW TABLE-BOOK;

OR,

TABLES OF ARITHMETIC MADE EASIER.

By D. C. UNDERHILL,  
FORMERLY TEACHER IN FRIENDS' SCHOOL, NEW YORK.



A NEW EDITION,  
REVISED, ENLARGED, AND IMPROVED.

NEW YORK:  
M. F. C. MARSH, 55 FULTON STREET.



## PREFACE.

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UNDERHILL'S NEW TABLE-BOOK, which, under one name or another, has for so many years enjoyed popular favor, is now presented to the public in an enlarged and improved form, and in a more worthy style of typography.

*Alphabetical* primers are no novelty; the present book, in its various editions, has been as yet the first and only attempt to produce an *arithmetical* primer fitted to initiate the young into the mysteries of figures, and to render the subject of numbers, in their uses and applications, attractive rather than repulsive to children.

A number of new pictorial illustrations will be found in the present edition. The Tables of Money, Weight, Measure, &c., have also been inserted in verse as well as in the standard form, in order to fix the facts permanently in the mind of the learner, so that they, either from memory or association, may be as promptly reproduced, when needed, as that universal one which recalls the number of days in each month.

It is only necessary to add that this little book is suited to the capacity of every child who is able to read, that it is designed to meet the wants of schools in every section of the country, and is equally well-adapted for home or parental instruction.

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Entered, according to Act of Congress, in the year 1846, by UNION ADAMS, and re entered in the year 1854, by WM. P. COOLEGEON, in the Clerk's Office of the District Court for the Southern District of New York

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# Notation.--Table of Figures.

ARABIC.

1 2 3 4 5 6 7 8 9 10

ROMAN.

I II. - III. IV V VI. VII VIII IX. X.

WRITTEN.

1 2 3 4 5 6 7 8 9 10



ONE.

Steamship to cross the seas,

1

I



TWO

Hives of honey-making bees,

2

II



THREE

Steamers stemming swift the tide,

3

III



FOUR

Horses saddled for a ride;

4

IV



FIVE

Cows that give us milk and cream,

5

V



SIX

Boys who in a hurry seem;

6

VI



SEVEN

Bells which ring a merry peal,

7

VII



EIGHT

Little girls all standing still;

8

VIII



NINE

Trees that in the orchard grow,

9

IX



TEN

Houses standing in a row

10

X

# NUMERATION

OF

## Roman and Arabic Figures.

<i>Roman.</i>	<i>Arabic.</i>	<i>Roman.</i>	<i>Arabic.</i>
I. One - - - -	1	XXX. Thirty - - -	30
II. Two - - - -	2	XXXI. Thirty-one - -	31
III. Three - - - -	3	XL. Forty - - - -	40
IV. Four - - - -	4	XLI. Forty-one - -	41
V. Five - - - -	5	L. Fifty - - - -	50
VI. Six - - - -	6	LI. Fifty-one - -	51
VII. Seven - - - -	7	LX. Sixty - - - -	60
VIII. Eight - - - -	8	LXI. Sixty-one - -	61
IX. Nine - - - -	9	LXX. Seventy - - -	70
X. Ten - - - -	10	LXXI. Seventy-one -	71
XI. Eleven - - - -	11	LXXX. Eighty - - -	80
XII. Twelve - - - -	12	LXXXI. Eighty-one -	81
XIII. Thirteen - - - -	13	XC. Ninety - - - -	90
XIV. Fourteen - - - -	14	XCI. Ninety-one -	91
XV. Fifteen - - - -	15	XCV. Ninety-five - -	95
XVI. Sixteen - - - -	16	XCIX. Ninety-nine -	99
XVII. Seventeen - - - -	17	C. 1 hundred - - -	100
XVIII. Eighteen - - - -	18	CC. 2 hundred - - -	200
XIX. Nineteen - - - -	19	CCC. 3 hundred - - -	300
XX. Twenty - - - -	20	CCCC. 4 hundred - -	400
XXI. Twenty-one - - - -	21	D. 5 hundred - - -	500
XXII. Twenty-two - - - -	22	DC. 6 hundred - - -	600
XXIII. Twenty-three - - - -	23	DCC. 7 hundred - - -	700
XXIV. Twenty-four - - - -	24	DCCC. 8 hundred - -	800
XXV. Twenty-five - - - -	25	DCCCC. 9 hundred - -	900
XXVI. Twenty-six - - - -	26	M. 1 thousand - - -	1000
XXVII. Twenty-seven - - - -	27	M,DCCC,LIV. One thousand	
XXVIII. Twenty-eight - - - -	28	eight hundred and	
XXIX. Twenty-nine - - - -	29	fifty-four, 1854.	

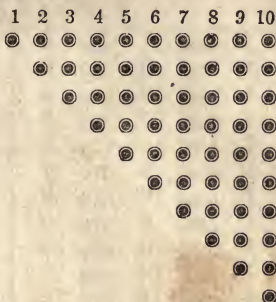
NOTE.—The Roman characters are seven in number—I. V. X. L. C. D. M.—and any number may be formed by combinations of them.

The repetition of a letter repeats its value in the number. X being ten, XX make twenty, XXX thirty, &c. A letter of less value, placed at the right-hand of one of a greater value, increases the number; placed at the left-hand, it diminishes the number. Thus, V being five, and I one, VI is six, and IV four; XI eleven, and IX nine, &c.

The Roman mode of numbering is now but little used; the Arabic being preferred for business and other purposes.



# Numeration.



How many balls are there in each line, counting three ways? Begin at 1, and count all around on the outside back to 1 again, and see if there are not twenty-seven. Then count the whole, and see if there are not 55

Read the following numbers:—

45, 78, 67, 13, 46, 79, 35, 68. 14, 80, 36, 69, 15, 48, 81, 37.  
 70, 49, 82, 43, 76, 17, 50, 83. 38, 18, 51, 84, 39, 72, 19, 52.  
 85, 20, 53, 41, 74, 87, 42, 75. 22, 55, 88, 23, 56, 24, 57, 90.  
 11, 44, 25, 91, 77, 26, 59, 33. 92, 66, 27, 60, 93, 32, 65, 94.

## NUMERATION TABLE.

The amount expressed by figures increases from right to left, but in reading or numerating them, commence at the left hand.

Hundreds of Sextillions	Hundreds of Quintillions	Hundreds of Quadrillions	Hundreds of Trillions	Hundreds of Billions	Hundreds of Millions	Hundreds of Thousands	Hundreds
Tens of Sextillions	Tens of Quintillions	Tens of Quadrillions	Tens of Trillions	Tens of Billions	Tens of Millions	Tens of Thousands	Tens
Sextillions	Quintillions	Quadrillions	Trillions	Billions	Millions	Thousands	Units
888	777	666	555	444	333	222	111
Eight hundred and eighty-eight Sextillions,	Seven hundred and seventy-seven Quintillions,	Six hundred and sixty-six Quadrillions,	Five hundred and fifty-five Trillions,	Four hundred and forty-four Billions,	Three hundred and thirty-three Millions,	Two hundred and twenty-two Thousand,	One hundred and eleven.

NOTE.—The above is the French method, and the one generally used, the English method points off six figures to a period.

## Table of Addition.

1 and 1 are 2	2 and 1 are 3
1 and 2 are 3	2 and 2 are 4
1 and 3 are 4	2 and 3 are 5
1 and 4 are 5	2 and 4 are 6
1 and 5 are 6	2 and 5 are 7
1 and 6 are 7	2 and 6 are 8
1 and 7 are 8	2 and 7 are 9
1 and 8 are 9	2 and 8 are 10
1 and 9 are 10	2 and 9 are 11
1 and 10 are 11	2 and 10 are 12
1 and 11 are 12	2 and 11 are 13
1 and 12 are 13	2 and 12 are 14
3 and 1 are 4	4 and 1 are 5
3 and 2 are 5	4 and 2 are 6
3 and 3 are 6	4 and 3 are 7
3 and 4 are 7	4 and 4 are 8
3 and 5 are 8	4 and 5 are 9
3 and 6 are 9	4 and 6 are 10
3 and 7 are 10	4 and 7 are 11
3 and 8 are 11	4 and 8 are 12
3 and 9 are 12	4 and 9 are 13
3 and 10 are 13	4 and 10 are 14
3 and 11 are 14	4 and 11 are 15
3 and 12 are 15	4 and 12 are 16
5 and 1 are 6	6 and 1 are 7
5 and 2 are 7	6 and 2 are 8
5 and 3 are 8	6 and 3 are 9
5 and 4 are 9	6 and 4 are 10
5 and 5 are 10	6 and 5 are 11
5 and 6 are 11	6 and 6 are 12
5 and 7 are 12	6 and 7 are 13
5 and 8 are 13	6 and 8 are 14
5 and 9 are 14	6 and 9 are 15
5 and 10 are 15	6 and 10 are 16
5 and 11 are 16	6 and 11 are 17
5 and 12 are 17	6 and 12 are 18

# Table of Addition.—CONTINUED.

7 and 1 are 8	8 and 1 are 9
7 and 2 are 9	8 and 2 are 10
7 and 3 are 10	8 and 3 are 11
7 and 4 are 11	8 and 4 are 12
7 and 5 are 12	8 and 5 are 13
7 and 6 are 13	8 and 6 are 14
7 and 7 are 14	8 and 7 are 15
7 and 8 are 15	8 and 8 are 16
7 and 9 are 16	8 and 9 are 17
7 and 10 are 17	8 and 10 are 18
7 and 11 are 18	8 and 11 are 19
7 and 12 are 19	8 and 12 are 20
9 and 1 are 10	10 and 1 are 11
9 and 2 are 11	10 and 2 are 12
9 and 3 are 12	10 and 3 are 13
9 and 4 are 13	10 and 4 are 14
9 and 5 are 14	10 and 5 are 15
9 and 6 are 15	10 and 6 are 16
9 and 7 are 16	10 and 7 are 17
9 and 8 are 17	10 and 8 are 18
9 and 9 are 18	10 and 9 are 19
9 and 10 are 19	10 and 10 are 20
9 and 11 are 20	10 and 11 are 21
9 and 12 are 21	10 and 12 are 22
11 and 1 are 12	12 and 1 are 13
11 and 2 are 13	12 and 2 are 14
11 and 3 are 14	12 and 3 are 15
11 and 4 are 15	12 and 4 are 16
11 and 5 are 16	12 and 5 are 17
11 and 6 are 17	12 and 6 are 18
11 and 7 are 18	12 and 7 are 19
11 and 8 are 19	12 and 8 are 20
11 and 9 are 20	12 and 9 are 21
11 and 10 are 21	12 and 10 are 22
11 and 11 are 22	12 and 11 are 23
11 and 12 are 23	12 and 12 are 24

## Addition in Rhyme.



Two pennies had John,  
His sister had 1,  
They gave them to me,  
And then I had 3,  
Thus you may see,  
That 2 and 1 make 3.

---



Two apples had Jane,  
And Mary 2 more,  
They gave them to Sarah,  
And then she had 4;  
Thus, 2 and 2 are 4, we know,  
The apples make it plainly so.

---



James has 2 pears we see,  
Then suppose I give him 3,  
How many will there be?  
2 and 3 are 5 we know,  
So 3 and 2 for 5 must go,  
Look in the table and find it so.

---



Margaret had a pincushion,  
Presented by her mother,  
It had 5 pins upon one side,  
And 4 pins on the other—  
On the little velvet ball,  
How many pins were there in all?  
5 and 4, as 9 we view,  
And 4 and 5 are 9, as true,  
The table will say the same to you.



## Subtraction Table.

1 from 1 leaves 0	4 from 4 leaves 0
1 from 2 leaves 1	4 from 5 leaves 1
1 from 3 leaves 2	4 from 6 leaves 2
1 from 4 leaves 3	4 from 7 leaves 3
1 from 5 leaves 4	4 from 8 leaves 4
1 from 6 leaves 5	4 from 9 leaves 5
1 from 7 leaves 6	4 from 10 leaves 6
1 from 8 leaves 7	4 from 11 leaves 7
1 from 9 leaves 8	4 from 12 leaves 8
1 from 10 leaves 9	4 from 13 leaves 9
1 from 11 leaves 10	4 from 14 leaves 10
1 from 12 leaves 11	4 from 15 leaves 11
2 from 2 leaves 0	5 from 5 leaves 0
2 from 3 leaves 1	5 from 6 leaves 1
2 from 4 leaves 2	5 from 7 leaves 2
2 from 5 leaves 3	5 from 8 leaves 3
2 from 6 leaves 4	5 from 9 leaves 4
2 from 7 leaves 5	5 from 10 leaves 5
2 from 8 leaves 6	5 from 11 leaves 6
2 from 9 leaves 7	5 from 12 leaves 7
2 from 10 leaves 8	5 from 13 leaves 8
2 from 11 leaves 9	5 from 14 leaves 9
2 from 12 leaves 10	5 from 15 leaves 10
2 from 13 leaves 11	5 from 16 leaves 11
3 from 3 leaves 0	6 from 6 leaves 0
3 from 4 leaves 1	6 from 7 leaves 1
3 from 5 leaves 2	6 from 8 leaves 2
3 from 6 leaves 3	6 from 9 leaves 3
3 from 7 leaves 4	6 from 10 leaves 4
3 from 8 leaves 5	6 from 11 leaves 5
3 from 9 leaves 6	6 from 12 leaves 6
3 from 10 leaves 7	6 from 13 leaves 7
3 from 11 leaves 8	6 from 14 leaves 8
3 from 12 leaves 9	6 from 15 leaves 9
3 from 13 leaves 10	6 from 16 leaves 10
3 from 14 leaves 11	6 from 17 leaves 11



# Subtraction Table.—CONTINUED.

7 from 7 leaves	0	10 from 10 leaves	0
7 from 8 leaves	1	10 from 11 leaves	1
7 from 9 leaves	2	10 from 12 leaves	2
7 from 10 leaves	3	10 from 13 leaves	3
7 from 11 leaves	4	10 from 14 leaves	4
7 from 12 leaves	5	10 from 15 leaves	5
7 from 13 leaves	6	10 from 16 leaves	6
7 from 14 leaves	7	10 from 17 leaves	7
7 from 15 leaves	8	10 from 18 leaves	8
7 from 16 leaves	9	10 from 19 leaves	9
7 from 17 leaves	10	10 from 20 leaves	10
7 from 18 leaves	11	10 from 21 leaves	11
8 from 8 leaves	0	11 from 11 leaves	0
8 from 9 leaves	1	11 from 12 leaves	1
8 from 10 leaves	2	11 from 13 leaves	2
8 from 11 leaves	3	11 from 14 leaves	3
8 from 12 leaves	4	11 from 15 leaves	4
8 from 13 leaves	5	11 from 16 leaves	5
8 from 14 leaves	6	11 from 17 leaves	6
8 from 15 leaves	7	11 from 18 leaves	7
8 from 16 leaves	8	11 from 19 leaves	8
8 from 17 leaves	9	11 from 20 leaves	9
8 from 18 leaves	10	11 from 21 leaves	10
8 from 19 leaves	11	11 from 22 leaves	11
9 from 9 leaves	0	12 from 12 leaves	0
9 from 10 leaves	1	12 from 13 leaves	1
9 from 11 leaves	2	12 from 14 leaves	2
9 from 12 leaves	3	12 from 15 leaves	3
9 from 13 leaves	4	12 from 16 leaves	4
9 from 14 leaves	5	12 from 17 leaves	5
9 from 15 leaves	6	12 from 18 leaves	6
9 from 16 leaves	7	12 from 19 leaves	7
9 from 17 leaves	8	12 from 20 leaves	8
9 from 18 leaves	9	12 from 21 leaves	9
9 from 19 leaves	10	12 from 22 leaves	10
9 from 20 leaves	11	12 from 23 leaves	11



William had 3 peaches fair,  
 George and Thomas each his share,  
 One 8, the other 7;  
 Now search the table, and you will  
 see,  
 That peaches 8 and peaches 3,  
 Make peaches just 11;  
 Add 7 peaches to 11, as the table  
 shows,  
 And you'll have just 18, so the story  
 goes.

### Subtraction in Rhyme.



Three apples on a table lie,  
 And Jane takes one in passing by;  
 How many does she leave?  
 1 from 3 leaves 2,  
 So says the table true;  
 And 2 from 3 leaves 1,  
 When the work is rightly done;  
 And so must all believe.



Charlotte had 11 pins,  
 And gave Eliza 4;  
 Then all she had remaining  
 Were 7 and no more.  
 4 and 7 make 11,  
 Then 4 from 11 leaves 7,  
 And 7 from 11, four.



Peter has just 18 plums,  
 And gives his sister 10,  
 As gaily in the room he comes;  
 How many has he then?  
 The table makes it clear and  
 straight,  
 That 10 from 18 leaves just 8;  
 And 8 from 18, ten—  
 From 18 plums take 10 away,  
 8 plums are left, 'tis plain as day.

## Table of Multiplication.

2 times 1 are 2	5 times 1 are 5
2 times 2 are 4	5 times 2 are 10
2 times 3 are 6	5 times 3 are 15
2 times 4 are 8	5 times 4 are 20
2 times 5 are 10	5 times 5 are 25
2 times 6 are 12	5 times 6 are 30
2 times 7 are 14	5 times 7 are 35
2 times 8 are 16	5 times 8 are 40
2 times 9 are 18	5 times 9 are 45
2 times 10 are 20	5 times 10 are 50
2 times 11 are 22	5 times 11 are 55
2 times 12 are 24	5 times 12 are 60
3 times 1 are 3	6 times 1 are 6
3 times 2 are 6	6 times 2 are 12
3 times 3 are 9	6 times 3 are 18
3 times 4 are 12	6 times 4 are 24
3 times 5 are 15	6 times 5 are 30
3 times 6 are 18	6 times 6 are 36
3 times 7 are 21	6 times 7 are 42
3 times 8 are 24	6 times 8 are 48
3 times 9 are 27	6 times 9 are 54
3 times 10 are 30	6 times 10 are 60
3 times 11 are 33	6 times 11 are 66
3 times 12 are 36	6 times 12 are 72
4 times 1 are 4	7 times 1 are 7
4 times 2 are 8	7 times 2 are 14
4 times 3 are 12	7 times 3 are 21
4 times 4 are 16	7 times 4 are 28
4 times 5 are 20	7 times 5 are 35
4 times 6 are 24	7 times 6 are 42
4 times 7 are 28	7 times 7 are 49
4 times 8 are 32	7 times 8 are 56
4 times 9 are 36	7 times 9 are 63
4 times 10 are 40	7 times 10 are 70
4 times 11 are 44	7 times 11 are 77
4 times 12 are 48	7 times 12 are 84

# **Table of Multiplication.—CONTINUED.**

8 times 1 are 8	11 times 1 are 11
8 times 2 are 16	11 times 2 are 22
8 times 3 are 24	11 times 3 are 33
8 times 4 are 32	11 times 4 are 44
8 times 5 are 40	11 times 5 are 55
8 times 6 are 48	11 times 6 are 66
8 times 7 are 56	11 times 7 are 77
8 times 8 are 64	11 times 8 are 88
8 times 9 are 72	11 times 9 are 99
8 times 10 are 80	11 times 10 are 110
8 times 11 are 88	11 times 11 are 121
8 times 12 are 96	11 times 12 are 132
9 times 1 are 9	12 times 1 are 12
9 times 2 are 18	12 times 2 are 24
9 times 3 are 27	12 times 3 are 36
9 times 4 are 36	12 times 4 are 48
9 times 5 are 45	12 times 5 are 60
9 times 6 are 54	12 times 6 are 72
9 times 7 are 63	12 times 7 are 84
9 times 8 are 72	12 times 8 are 96
9 times 9 are 81	12 times 9 are 108
9 times 10 are 90	12 times 10 are 120
9 times 11 are 99	12 times 11 are 132
9 times 12 are 108	12 times 12 are 144
10 times 1 are 10	13 times 1 are 13
10 times 2 are 20	13 times 2 are 26
10 times 3 are 30	13 times 3 are 39
10 times 4 are 40	13 times 4 are 52
10 times 5 are 50	13 times 5 are 65
10 times 6 are 60	13 times 6 are 78
10 times 7 are 70	13 times 7 are 91
10 times 8 are 80	13 times 8 are 104
10 times 9 are 90	13 times 9 are 117
10 times 10 are 100	13 times 10 are 130
10 times 11 are 110	13 times 11 are 143
10 times 12 are 120	13 times 12 are 156



## Multiplication in Rhyme.



Samuel has 2 knives,  
And Moses twice the same;  
How many then for Moses,  
Ought we to name?  
*Twice* means as many more,  
Then Moses must have 4;  
Twice 1 are 2,  
Says the table to you:  
And twice 2 are 4,  
It says furthermore.

---



Amelia has 2 roses,  
And Frances has 2 more,  
Miss Helen has another 2,  
To add unto the 4—  
And 4 and 2 are 6 we call,  
The number which they had in all:  
So 3 times 2 are 6 we see,  
And 6 we say for 2 times 3.

---



Four boys at marbles play,  
And each has 5 they say;  
How many marbles have they all?  
Can any one the number call?  
Yes, 5 and 5 we know are 10,  
Two other fives the same again;  
And then 2 tens are 20;  
So 4 times 5 do 20 make,  
And 5 times 4 do 20 take,  
And here are marbles plenty.

---

## Division in Rhyme.



Since 2 ones make 2 we know,  
Then 2 but once in 2 will go;  
Thus the father doth divide  
2 apples, one to either side,  
Which 2 good children share  
As you can see them there.



## Division Table.

1 in 2 goes 2 times	4 in 8 goes 2 times
1 in 3 goes 3 times	4 in 12 goes 3 times
1 in 4 goes 4 times	4 in 16 goes 4 times
1 in 5 goes 5 times	4 in 20 goes 5 times
1 in 6 goes 6 times	4 in 24 goes 6 times
1 in 7 goes 7 times	4 in 28 goes 7 times
1 in 8 goes 8 times	4 in 32 goes 8 times
1 in 9 goes 9 times	4 in 36 goes 9 times
1 in 10 goes 10 times	4 in 40 goes 10 times
1 in 11 goes 11 times	4 in 44 goes 11 times
1 in 12 goes 12 times	4 in 48 goes 12 times
1 in 13 goes 13 times	4 in 52 goes 13 times
2 in 4 goes 2 times	5 in 10 goes 2 times
2 in 6 goes 3 times	5 in 15 goes 3 times
2 in 8 goes 4 times	5 in 20 goes 4 times
2 in 10 goes 5 times	5 in 25 goes 5 times
2 in 12 goes 6 times	5 in 30 goes 6 times
2 in 14 goes 7 times	5 in 35 goes 7 times
2 in 16 goes 8 times	5 in 40 goes 8 times
2 in 18 goes 9 times	5 in 45 goes 9 times
2 in 20 goes 10 times	5 in 50 goes 10 times
2 in 22 goes 11 times	5 in 55 goes 11 times
2 in 24 goes 12 times	5 in 60 goes 12 times
2 in 26 goes 13 times	5 in 65 goes 13 times
3 in 6 goes 2 times	6 in 12 goes 2 times
3 in 9 goes 3 times	6 in 18 goes 3 times
3 in 12 goes 4 times	6 in 24 goes 4 times
3 in 15 goes 5 times	6 in 30 goes 5 times
3 in 18 goes 6 times	6 in 36 goes 6 times
3 in 21 goes 7 times	6 in 42 goes 7 times
3 in 24 goes 8 times	6 in 48 goes 8 times
3 in 27 goes 9 times	6 in 54 goes 9 times
3 in 30 goes 10 times	6 in 60 goes 10 times
3 in 33 goes 11 times	6 in 66 goes 11 times
3 in 36 goes 12 times	6 in 72 goes 12 times
3 in 39 goes 13 times	6 in 78 goes 13 times

# **Division Table.—CONTINUED.**

7 in 14 goes 2 times	10 in 20 goes 2 times
7 in 21 goes 3 times	10 in 30 goes 3 times
7 in 28 goes 4 times	10 in 40 goes 4 times
7 in 35 goes 5 times	10 in 50 goes 5 times
7 in 42 goes 6 times	10 in 60 goes 6 times
7 in 49 goes 7 times	10 in 70 goes 7 times
7 in 56 goes 8 times	10 in 80 goes 8 times
7 in 63 goes 9 times	10 in 90 goes 9 times
7 in 70 goes 10 times	10 in 100 goes 10 times
7 in 77 goes 11 times	10 in 110 goes 11 times
7 in 84 goes 12 times	10 in 120 goes 12 times
7 in 91 goes 13 times	10 in 130 goes 13 times
8 in 16 goes 2 times	11 in 22 goes 2 times
8 in 24 goes 3 times	11 in 33 goes 3 times
8 in 32 goes 4 times	11 in 44 goes 4 times
8 in 40 goes 5 times	11 in 55 goes 5 times
8 in 48 goes 6 times	11 in 66 goes 6 times
8 in 56 goes 7 times	11 in 77 goes 7 times
8 in 64 goes 8 times	11 in 88 goes 8 times
8 in 72 goes 9 times	11 in 99 goes 9 times
8 in 80 goes 10 times	11 in 110 goes 10 times
8 in 88 goes 11 times	11 in 121 goes 11 times
8 in 96 goes 12 times	11 in 132 goes 12 times
8 in 104 goes 13 times	11 in 143 goes 13 times
9 in 18 goes 2 times	12 in 24 goes 2 times
9 in 27 goes 3 times	12 in 36 goes 3 times
9 in 36 goes 4 times	12 in 48 goes 4 times
9 in 45 goes 5 times	12 in 60 goes 5 times
9 in 54 goes 6 times	12 in 72 goes 6 times
9 in 63 goes 7 times	12 in 84 goes 7 times
9 in 72 goes 8 times	12 in 96 goes 8 times
9 in 81 goes 9 times	12 in 108 goes 9 times
9 in 90 goes 10 times	12 in 120 goes 10 times
9 in 99 goes 11 times	12 in 132 goes 11 times
9 in 108 goes 12 times	12 in 144 goes 12 times
9 in 117 goes 13 times	12 in 156 goes 13 times

## Division in Rhyme.



Harriet has 4 oranges,  
For little Jane and Mary,  
In equal share, each has a pair,  
The numbers do not vary.  
And thus we see Division true;  
Both have the 4, and each has 2;  
2 twos are then in four we know,  
And 2 in 4 will 2 times go.



Six large apples Henry had,  
To give to Silas, John, and  
Thomas,  
And 2 he gave each little lad,  
According to his promise;  
And as he dealt them round,  
3 twos in 6 were found;  
So 2 in 6 will 3 times go,  
Then 3 in 6 goes twice we know.



A teacher had just 20 toys,  
To give to 4 good little boys,  
He would the fives in 20 teach,  
And so he gave 5 toys to each,  
4 fives in 20 thus he shows,  
And then 5 fours, as each boy  
knows;  
So 5 into 20 will go 4 times,  
And 4 into 20 go 5, correctly  
chimes;  
The table will show you the truth  
of the rhymes.

## The Uses of the Tables.

*Notation* writes the figures down,  
And *Numeration* reads them—  
*Addition* makes two numbers one,  
And more so, when it needs  
them.  
*Subtraction* of two numbers makes  
A third—as you have seen them—  
The smaller from the larger takes,  
And shows the odds between them,  
*Multiplication*, in a word,

Adds much with little labor,  
And with two numbers makes a  
third,  
A far superior neighbor.  
*Division* with two numbers shows  
How many times attaining,  
The less one in the larger goes,  
And what there is remaining.  
The large square table at a view,  
Will show what each and all can do



# TABLES OF MONEY, WEIGHTS, MEASURES, ETC.

## I. MONEY.

Money has various names, or rates :

FEDERAL, or that of the United States,

Has *Eagles, Dollars, Dimes, and Cents.*

STERLING, or English, which one sees

In England and her colonies,

Has *Guineas, Pounds, Shillings, and Pence.*

FRENCH, used in France through all her ranks,

Has simple *Centimes, Décimes, Francs.*



100 Cents.



50 Cents



10 Cents.



3 Cents



25 Cents.



500 Cents.



25 Cents.

**FEDERAL, OR UNITED STATES MONEY.**—The value of this money increases by tens, which makes it very simple and easy to reckon, and hence accounts are mostly kept in Dollars and Cents, in this country.

### TABLE.

10 mills <i>m.</i> make	1 cent, <i>c.</i>
10 cents	1 dime, <i>d.</i>
10 dimes	1 dollar, <i>\$.</i>
10 dollars	1 eagle, <i>E.</i>

Observe the denominations—Eagle, *E.* ; dollar, *\$* ; dime, *d.* ; cent, *c.* ; mill, *m.*

The mill is not a coin, and is only used in counting.

Beside money made of silver, gold, and copper, there are also pieces of ornamented paper representing money, upon which are printed sums from one dollar to one thousand; these pass readily for what is stamped upon them for all the purposes of business.

We count 10 *mills* to every *cent*,  
 10 cents to every *dime*;  
 10 dimes are in the *dollar* spent,  
 10 dollars in the *eagle* chime,



6 Pence.



1 Shilling.



1 Sovereign.

**ENGLISH OR STERLING MONEY.**—This currency is used in England and the British colonies.

TABLE.

4 farthings, <i>qr.</i> , make	-	-	-	1 penny, <i>d.</i>
12 pence	-	-	-	1 shilling, <i>s.</i>
20 shillings	-	-	-	1 pound, <i>£.</i>
<hr/>				
5 shillings	-	-	-	1 crown, <i>c.</i>
20 shillings	-	-	-	1 sovereign, <i>sov.</i>
21 shillings	-	-	-	1 guinea, <i>G.</i>

Observe the denominations—Pound, *£*; shilling, *s.* pence, *d.*; farthing, *qr.*; from the Latin words, *libra*, a pound; *solidus*, a shilling; *denarius*, a penny; *quadrans*, a farthing.

Farthings are marked in fractions thus:— $\frac{1}{4}$ , one farthing;  $\frac{1}{2}$ , two farthings, or half penny;  $\frac{3}{4}$ , three farthings.

The sovereign, which is made of gold, is of the same value as the pound. Whatever costs a pound, therefore, a sovereign will pay for. There is no coin called a pound.

4 *farthings* make one English *penny*;  
 12 pence are in one *shilling* found:  
 While 21 shillings make one *guinea*,  
 And 20 shillings form one *pound*.

5 shillings make a silver *crown*,  
 A sovereign is a golden *pound*.





50 Centimes.



1 Franc.



2 Francs.

**FRENCH MONEY.**—This money is used in France, and also in the French colonial possessions to some extent.

TABLE.

10 centimes,*	c., make	-	-	-	-	1 décime, d.
10 décimes,†		-	-	-	-	1 franc,‡ fr.

Observe the denominations—Franc, fr. ; décime, d. : centime, c.

The five-franc piece is frequently met with in this country, and passes currently at 94 cents. Coins of a less number of francs, pass also at the rate of 19 cents to the franc.

10 *centimes* in one *décime* meet,  
10 decimes make one *franc* complete.

FEDERAL and FRENCH are decimal,  
They count by tens alone:  
Of coins it always take 10 small  
To make the next larger one.  
The ENGLISH currency, 'tis thought,  
To the same standard will be brought.  
The *guinea* then no more we'll see,  
The *pound* 1000 mills will be;  
And all the lower coins will range,  
In just accordance with this change.

## II. WEIGHTS.

TROY WEIGHT of silver and gold disposes.  
APOTHECARIES' WEIGHT is for doctors' doses;  
Whatever else your trade employs,  
Comes under the rule of AVOIRDUPOIS.

\* Pronounced *sontem*.

† Pronounced *daseem*.

‡ Pronounced *fraung*, or frank.



**TROY WEIGHT**—Is used to weigh Gold, Silver, Jewels, and Liquors.

TABLE.

24 grains, <i>gr.</i> , make	-	1 pennyweight, <i>dwt.</i>
20 pennyweights	- - -	1 ounce, <i>oz.</i>
12 ounces	- - -	1 pound, <i>lb.</i>

Observe the denominations—Pound, *lb.*; ounce, *oz.*: pennyweight, *dwt.*; grain, *gr.*

This rule for weighing gold, will state  
That 24 *grains* make one *pennyweight* :  
And 20 pennyweights in an *ounce* are found,  
While 12 good ounces make a *pound*.

**APOTHECARIES' WEIGHT.**—Is used in mixing doses of medicine, but drugs and medicines, like most other merchandise, are bought and sold by AVOIRDUPOIS WEIGHT.

TABLE.

20 grains, <i>gr.</i> , make	- - -	1 scruple, $\mathfrak{d}$ .
3 scruples	- - -	1 drachm, $\mathfrak{z}$ .
8 drachms	- - -	1 ounce, $\mathfrak{z}$ .
12 ounces	- - -	1 pound, $\mathfrak{lb}$ .

Observe the denominations—Pound,  $\mathfrak{lb}$ .; ounce,  $\mathfrak{z}$ .; drachm,  $\mathfrak{z}$ .; scruple,  $\mathfrak{d}$ .; grain, *gr.*

In mixing doses, Doctors say  
That 20 *grains* one *scruple* weigh ;  
3 scruples make one *drachm* they hold,  
8 drachms are to the ounce enrolled,  
And ounces 12 for a *pound* are sold.

**AVOIRDUPOIS WEIGHT**—Is used in weighing all coarse and heavy goods, groceries, &c.; and all metals except silver and gold.

TABLE.

16 drachms, <i>dr.</i> , make	-	1 ounce, <i>oz.</i>
16 ounces	- - -	1 pound, <i>lb.</i>
25 pounds	- - -	1 quarter, <i>qr.</i>
4 quarters	- - -	1 hundred weight, <i>cwt.</i>
20 hundred weight	- - -	1 tun, <i>T.</i>

Observe the denominations—Tun, *T.* ; hundred weight, *cwt.* ; quarter, *qr.* ; pound, *lb.* ; ounce, *oz.* ; drachm, *dr.*

2000 pounds make a tun in the table ; when, as it sometimes is, it is 2240 lbs., 28 pounds make a quarter. Except in special cases, the tun is now regarded as 2000 pounds by the principal merchants of our cities.

16 *drachms* make one *ounce*,  
16 ounces make one *pound*,  
25 pounds one *quarter* counts,  
4 quarters make a *hundred* round ;  
And 20 hundred weight are run,  
To make a full and perfect *tun*.

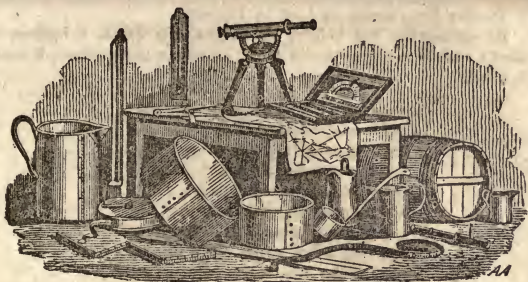
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'Twas once absurdly held and said  
112 pounds make a hundred weight ;  
And then this table always read,  
That a quarter hundred was 28

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### III. MEASURES.

By different measures, we obtain  
Due quantities of wood or grain,  
Of cloth, or land, or wine, and tell  
How much of each we buy or sell.  
CLOTH MEASURE is for ribbons, tapes,  
And cloths, and silk, for coats or capes.  
LONG MEASURE serves to tell and trace  
The distances from place to place.  
SURVEYORS' MEASURES, understand,  
Are only used in measuring land.  
DRY MEASURE tells how much we gain  
Of salt, coal, fruit, potatoes, grain ;  
While LIQUID MEASURE justly classes  
Wine, spirits, beer, oil, milk, molasses.  
SQUARE MEASURE deals with surfaces,  
As walls, and floors, and fields, and seas ;  
And CUBIC MEASURE ascertains  
What any solid shape contains.  
TIME MEASURE tells us, as they fly,  
How days, months, years, are rushing by ;  
And CIRCULAR MEASURE shows the worth  
Of lines that circle round the earth,  
And of the bands which reason's eye  
Traces across the glittering sky.



# 1. MEASURES OF LENGTH.

**CLOTH MEASURE**—Is used to measure Cloths, Ribbons, Tapes, &c.  
TABLE.

2½ inches, <i>in.</i> , make	-	-	1 nail, <i>n.</i>
4 nails	-	-	1 quarter of a yard, <i>qr.</i>
4 quarters	-	-	1 yard, <i>yd.</i>

## FOREIGN CLOTH MEASURES.

2½ quarters, make	-	-	1 ell Hamburg, <i>E. H.</i>
3 quarters	-	-	1 ell Flemish, <i>E. F.</i>
5 quarters	-	-	1 ell English, <i>E. E.</i>
6 quarters	-	-	1 ell French, <i>E. Fr.</i>

Observe the regular denominations—Yard, *yd.*; quarter, *qr.*; nail, *n.*; inch, *in.*

In measuring cloth for use or sale,  
2½ inches make one nail;  
4 nails one quarter we regard,  
And four full quarters make one yard.  
Nails now are seldom used, we've heard,  
Eighths and sixteenths are much preferred.

**LONG MEASURE**—Is used to measure distances, and to ascertain the length of anything without regard to breadth.

## TABLE.

10 lines, <i>l.</i> , make	-	-	1 inch, <i>in.</i>
12 inches	-	-	1 foot, <i>ft.</i>
3 feet	-	-	1 yard, <i>yd.</i>
5½ yards	-	-	1 rod or pole, <i>p.</i>
40 poles, or 220 yards	-	-	1 furlong, <i>fur.</i>
8 furlongs	-	-	1 mile, <i>M.</i>
3 miles	-	-	1 league, <i>L.</i>
60 geographic, or 69½ statute miles	-	-	1 degree, <i>Deg.</i>
360 degrees	-	-	the circumference of the earth.

Observe the denominations—Degree, *Deg.*; league, *L.*; mile, *M.*, furlong, *fur.*; rod, or pole, *p.*; yard, *yd.*; foot, *ft.*; inch, *in.*; line, *l.*



Twelve lines make an inch in France.

In measuring the height of horses the *hand*, 4 inches, is used; and in measuring the depth of water, the *fathom*, 6 feet, is used.

In measuring distances or lengths,  
10 *lines* are said to make one *inch*;  
12 inches make a perfect *foot*,  
3 feet into a *yard* are put;  
5½ yards make a *rod* or *pole*,  
And 40 rods a *furlong* whole;  
8 furlongs make a *mile* quite big,  
And 3 full miles make up a *league*.  
In measuring round the earth, we see,  
That 60 miles make one *degree*;  
Degrees 360, then,  
The *earth's circumference* will span.

**SURVEYOR'S MEASURE.**—This measure is used in ascertaining the length and breadth of land, roads, &c.

TABLE.

7 92-100 inches, <i>in.</i> , make	-	-	1 link, <i>l.</i>
25 links	-	-	1 pole, <i>p.</i>
4 poles, or 100 links	-	-	1 chain, <i>c.</i>
10 chains	-	-	1 furlong, <i>fur</i>
8 furlongs	-	-	1 mile, <i>M.</i>

Observe the denominations—Link, *l.*; pole, *p.*; chain, *c.*; furlong, *fur.*; mile, *M.*

7 inches and ninety-two hundredths, make  
One *link* in the chain surveyors take,  
100 links his *chain* embraces,  
With 80 chains one *mile* he traces.

2. MEASURES OF CAPACITY.

**LIQUID MEASURE**—Is used in measuring Wine, Spirits, Beer, Oil, Vinegar. Milk, Molasses, &c.

TABLE.

4 gills, <i>g.</i> , make	-	-	1 pint, <i>pt.</i>
2 pints	-	-	1 quart, <i>qt.</i>
4 quarts	-	-	1 gallon, <i>gal.</i>
31½ gallons	-	-	1 barrel, <i>bbl.</i>
2 barrels	-	-	1 hogshead, <i>hhd.</i>
2 hogsheads	-	-	1 pipe, <i>p.</i>
2 pipes	-	-	1 tun, <i>t.</i>

Observe the regular denominations—Tun, *t.*; pipe, *p.*; hogshead, *hhd.*; barrel, *bbl.*; gallon, *gal.*; quart, *qt.*; pint, *pt.*; gill, *g.*



## MEASURES OF CAPACITY SELDOM USED.

TABLE.

9 gallons, <i>g.</i> , make	-	-	1 firkin, <i>f.</i>
10 gallons	-	-	1 anker, <i>a.</i>
2 firkins, or 18 gallons	-	-	1 kilderkin, <i>k.</i>
2 kilderkins, or 36 gallons	-	-	1 barrel of beer, &c. <i>bbl.</i>
1½ barrels, or 54 gallons	-	-	1 hogshead of beer, <i>hhd.</i>
42 gallons	-	-	1 tierce, <i>t.</i>
2 tierces, or 84 gallons	-	-	1 puncheon, <i>p.</i>

Most liquids are now sold by the gallon, quart, and pint, and not by the other denominations of liquid measure; in fact, vessels are rarely made to hold the exact quantities stated in the table, and frequently retain the names though containing much more, the hogshead and barrel for instance.

In measuring liquids, first we take  
 4 little *gills* one *pint* to make;  
 2 pints then make one *quart*, and still  
 4 quarts the *gallon* measure fill.  
 Gallons one half and 31,  
 Will fill a *barrel* to the bung.  
 2 barrels to the *hogshead* go,  
 2 hogsheads fill a *pipe*, and so  
 2 pipes will near a *tun* o'erflow.

Though many *good things* are measured still  
 By gallon, quart, and pint, and gill,  
 Yet Liquid Measure oft seems to me  
 "The measure of human misery."  
 For O, what countless evils come  
 From brandy, whiskey, gin, and rum,  
 Which it were better ne'er to touch,  
 For a *single drop* is "a drop too much."

**DRY MEASURE**—Is used in measuring Grain, Potatoes, Fruit, Coal, Salt, Seeds, &c.

TABLE.

2 pints, <i>pt.</i> , make	-	-	1 quart, <i>qt.</i>
8 quarts	-	-	1 peck, <i>p.</i>
4 pecks	-	-	1 bushel, <i>bush.</i>
36 bushels	-	-	1 chaldron of coal, <i>chal.</i>
8 bushels	-	-	1 quarter of corn, <i>qr.</i>

Observe the regular denominations—Chaldron, *chal.*; bushel, *bush.*; peck, *p.*; quart, *qt.*; pint, *pt.*

2 *pints* DRY MEASURE make one *quart*,  
 8 quarts one honest *peck* contains,  
 4 pecks are in a *bushel* brought;  
 8 bushels, if you are measuring grains,  
 Are to the *quarter*\* counted out;  
 But if bituminous coal,† you take  
 Then 6 and 30 bushels make  
 The *chaldron*, which in trade obtains,

### 3. MEASURES OF CONTENT.

**LAND OR SQUARE MEASURE**—Is used in reckoning the contents of any surface by its length and breadth.

#### TABLE.

144 square inches, <i>s. in.</i> ,	make	1 square foot, <i>S. F.</i>
9 square feet - - -		1 square yard, <i>S. Y.</i>
30½ square yards - - -		1 square rod, pole, or perch, <i>S. P.</i>
40 square poles - - -		1 square rood, <i>S. R.</i>
4 square roods - - -		1 square acre, <i>S. A.</i>
640 square acres - - -		1 square mile, <i>S. M.</i>

Observe the denominations—Square mile, *S. M.*; square acres, *S. A.*, square rood, *S. R.*; square perch, *S. P.*; square yard, *S. Y.*; square foot, *S. F.*; square inch, *S. I.*

*Square inches* one hundred and forty-four  
 Make one *square foot*, and nothing more.  
 9 square feet make one *square yard*,  
 30 yards and a quarter are one *pole squared*;  
 40 square poles make one *square rood*,  
 Yet 4 square roods make an *acre* good;  
 And acres 640 the while,  
 Are wanted to make up one *square mile*.

**SOLID OR CUBIC MEASURE**—Is used to reckon the contents of anything by its length, breadth, and depth.

#### TABLE.

1728 solid inches, <i>s. in.</i> ,	make	1 solid foot, <i>S. F.</i>
40 feet of round, or 50 feet of hewn	} timber	1 tun, <i>Tun.</i>
27 solid feet - - -		
16 solid feet of wood - -		1 solid yard, <i>S. Yd.</i>
16 solid feet of wood - -		1 cord foot of wood, <i>Fl. W.</i>
8 cord feet of wood - -		1 cord, <i>C.</i>

Observe the denominations—Cord, *C.*; cord foot of wood, *Fl. W.*, solid yard, *S. Y.*; solid foot, *S. F.*; solid inch, *S. I.*

\* Wheat is measured in Great Britain by the quarter of 480 lbs.

† Bituminous, or soft coal, is sold by measure, and anthracite, or hard coal, by weight.

One thousand seven hundred and twenty-eight  
 Inches one solid *foot* complete.  
 In *timber*, 40 feet, if *round*,  
 Or 50 *hewn*, a *tun* is found.  
 In measuring ships the rule must run,  
 Feet 2 and 40 make a *tun*.  
 Feet 27 one *solid yard* we rate,  
 A *cord of wood* one hundred twenty-eight.



#### 4. MEASURES OF DURATION AND CIRCULAR DISTANCES.

**TIME MEASURE**—Is used in computing the different periods in which any transaction or event occurs.

TABLE.

60 seconds, <i>sec.</i> , make	1 minute, <i>m.</i>
60 minutes	1 hour, <i>h.</i>
24 hours	1 day, <i>d.</i>
7 days	1 week, <i>w.</i>
4 weeks	1 month, <i>mo.</i>
12 months	1 year, <i>yr.</i>
100 years	1 century, <i>C.</i>

Observe the denominations—Century, *C.*; year, *yr.*; month, *mo.*; week, *w.*; day, *d.*; hour, *h.*; minute, *m.*; second, *sec.*

12 calendar months, or 13 lunar months, 1 day, and 6 hours, or 365 days, 6 hours, 1 common, or Julian year.

The year is divided by the calendar as follows:—

	DAYS.		DAYS.
1st month, January, has	31	7th month, July, has	31
2d " February,	28	8th " August,	31
3d " March,	31	9th " September,	30
4th " April,	30	10th " October,	31
5th " May,	31	11th " November,	30
6th " June,	30	12th " December,	31
	181		365

February has 29 days every fourth year. which is called *Bis-sextile*, or *Leap Year*. Every *Leap Year* may be divided by 4 without a remainder; other years, divided by 4, leave one, which shows their number after *Leap Year*. Thus, 1854 divided by 4, leaves a remainder of 2: that is, it is the second after *Leap Year*, &c., &c.

The number of days in each month, may easily be remembered by the following verse:—

Thirty days have September,  
April, June, and November;  
All the rest have thirty-one,  
Excepting February alone,  
Which hath twenty-eight, nay more,  
Hath twenty-nine one year in four.

There are in every year four seasons, viz: *SPRING*, *SUMMER*, *AUTUMN*, and *WINTER*.

The *Spring* months are March, April, and May.

The *Summer* months are June, July, and August.

The *Autumn* months are September, October, and November.

The *Winter* months are December, January, and February.

The *Spring* is the season of flowers; the *Summer* of fruits; the *Autumn* of the decay of vegetation and the fall of the leaf; and the *Winter* of frost and snow.

60 *seconds* make 1 *minute*,  
Time enough some good to do;  
60 *minutes* make 1 *hour*,  
Who will dare to waste it? Who?  
24 *hours* make up the *day*,  
Time for work, and sleep, and play;  
7 *days* to the *week* are given,  
Six for toil and one for heaven.  
God gives me six for work and play  
I will not steal the seventh away.  
4 *weeks* in every *month* appear,  
12 *months* make up the rolling *year*;  
100 *years*—few live them to see—  
Are what are called a *century*.

**CIRCULAR MEASURE**—Is used by Astronomers, Navigators, &c. in making their calculations.

TABLE.

60 seconds, " make	-	-	1 minute, '
60 minutes	-	-	1 degree, °
30 degrees	-	-	1 sign, S.
12 signs, or 360 degrees	-	-	1 circle of the Zodiac, C.

Observe the denominations—Circle, C.; sign, S.; degree, °; minute, ';  
second, ''.



60 *seconds* make one *minute*,  
 60 *minutes* one *degree* :  
 30 *degrees* one *sign* has in it,  
 12 *signs* we in { a circle } see.  
                                   the *zodiac*

'Tis knowledge gained from this, that guides  
 The ship, that o'er the ocean rides,  
 And shows the pilot how to steer  
 From place to place, remote or near.

#### IV. BOOKS, PAPER, AND PARCHMENT.

BOOKS, PAPER, PARCHMENT, all concern  
 Men of a literary turn :  
 As authors, printers, and booksellers—  
 A race of genuine clever fellows—  
 The paper manufacturer, too,  
 With these, of course, has much to do ;  
 The stationer and binder then—  
 Known as industrious, thrifty men—  
 Bear each an honorable part  
 In the noble, intellectual art,  
 Of furnishing the mind and heart.



##### 1. PAPER AND PARCHMENT.

**TABLE OF PAPER AND PARCHMENT.**—This table is used by  
 Papermakers, Printers, and dealers in Stationery, &c., &c.

###### TABLE.

24 sheets of paper, make	-	-	-	1 quire, <i>qr.</i>
20 quires	-	-	-	1 ream, <i>Rm.</i>
2 reams	-	-	-	1 bundle, <i>Bdl.</i>
10 reams	-	-	-	1 bale, <i>Bl.</i>

2 skins of parchment - - - 1 dozen, *doz.*  
 5 dozen - - - 1 roll, *rl.*

Observe the denominations—Quire, *qr.*; ream, *Rm.*; bundle, *Bdl.*; bale, *Blē.*; dozen, *doz.*; roll, *rl.*

Two dozen *sheets* one *quire* will take,  
 And 20 quires one *ream* composes;  
 2 reams we in a *bundle* make,  
 10 bundles a full *bale* encloses.

By *dozens* parchment-skins are told;  
 12 to the dozen, as of old;  
 5 dozen for a *roll* are sold.

The different sizes of paper are—Foolscap, post, demi, medium, royal, super-royal, imperial, and elephant. Larger papers are described by their length and breadth in inches; thus, 20 by 32, 24 by 38, 26 by 40, 29 by 44, &c., &c.

## 2. SIZES OF BOOKS.

**TABLE OF BOOKS.**—This table is used by Authors, Printers, and Booksellers, in ascertaining and naming the sizes of books.

### TABLE.

1 sheet of paper folded into 2 leaves is a folio, *Fol.*  
 1 sheet of paper folded into 4 leaves is a quarto, *4to.*  
 1 sheet of paper folded into 8 leaves is an octavo, *8vo.*  
 1 sheet of paper folded into 12 leaves is a duodecimo, *12mo.*  
 1 sheet of paper folded into 18 leaves is an octodecimo, *18mo.*

Observe the denominations—Folio, *fol.*; quarto, *4to.*; octavo, *8vo.*; duodecimo, *12mo.*; octodecimo, *18mo.*

Whoever with a book engages,  
 Well knows each leaf will count 2 pages;  
 One *folio* sheet 2 leaves will rate,  
 A *quarto* 4, *octavo* 8;  
 A *duodecimo*\* a dozen clean,  
 An *octodecimo* eighteen;  
*Vicessimo quarto* makes up twenty-four.  
*Tricessimo secundo* thirty-two, no more.

---

\* The duodecimo, octodecimo, vicessimo quarto, and tricessimo secundo, which are Latin numerals, are generally called 12mo., 18mo., 24mo., and 32mo. There are also 48mo., 64mo., and 72mo.

## V. MISCELLANEOUS TABLES.

### 1. TABLE OF WEIGHTS.

A barrel of flour weighs	196 lbs.
A barrel of beef or pork	200 "
A barrel of pot ashes	200 "
A firkin of butter	56 "
A bushel of salt	56 "
A peck of salt	14 "
A gallon of train oil	7½ "
A stone of wire weighs	10½ "
A stone of sheet iron, or horseman's weight	14 "
A quintal of fish	100 "
A faggot of steel	120 "
A fother of lead	2184 "

### 2. TABLE OF PARTICULARS.

12 things make	1 dozen, <i>doz.</i>
12 dozen, or 144	1 gross, <i>gro.</i>
12 gross or 1728	1 great gross, <i>g. gro.</i>
20 things	1 score.
5 score	1 hundred, <i>C.</i>

### 3. VALUE OF SILVER AND GOLD COINS.

	\$ cts.
An English shilling	24
" " crown	1 20
" " sovereign	4 84
" " pound	4 84
" " guinea	5 00
A franc of France	19
A thaler of Germany	67
A Spanish doubloon	16 00
A South American doubloon	15 60
Four shillings and two pence sterling	1 00

### 4. OLD ENGLISH COINS.

	s. d.
A groat	4
A tester	6
A noble	6 8
An angel	10 0
A mark	13 4

## 5. TABLES OF ALIQUOT, OR EVEN PARTS.

Being fractions or broken parts of certain things and their value.

**Parts of a Dollar.**



1 cent is	$\frac{1}{100}$
3 cts. are	$\frac{3}{100}$
5 " "	$\frac{5}{100}$
10 " "	$\frac{1}{10}$
25 " "	$\frac{1}{4}$
50 " "	$\frac{1}{2}$
62 $\frac{1}{2}$ " "	$\frac{5}{8}$
75 " "	$\frac{3}{4}$
87 $\frac{1}{2}$ " "	$\frac{7}{8}$



**Parts of a Penny.**

1 farthing is	$\frac{1}{4}$
2 farth's are	$\frac{1}{2}$
3 " "	$\frac{3}{4}$

**Parts of a Shilling.**



1 penny is	$\frac{1}{12}$
$1\frac{1}{2}$ pence are	$\frac{1}{8}$
2 " "	$\frac{1}{6}$
3 " "	$\frac{1}{4}$
4 " "	$\frac{1}{3}$
5 " "	$\frac{5}{12}$
6 " "	$\frac{1}{2}$
7 " "	$\frac{7}{12}$
8 " "	$\frac{2}{3}$
9 " "	$\frac{3}{4}$



**Parts of a Pound.**



s.	d.	are	
1	8	are	$\frac{1}{12}$
2	0	"	$\frac{1}{10}$
2	6	"	$\frac{1}{8}$
3	4	"	$\frac{1}{6}$
4	0	"	$\frac{1}{5}$
5	0	"	$\frac{1}{4}$
6	8	"	$\frac{1}{3}$
10	0	"	$\frac{1}{2}$
12	0	"	$\frac{2}{3}$
13	0	"	$\frac{5}{6}$
15	0	"	$\frac{3}{4}$
16	0	"	$\frac{4}{5}$
17	0	"	$\frac{17}{20}$
18	0	"	$\frac{9}{10}$

**Parts of a Cwt. of 112 lbs.**

4 lbs.	$\frac{1}{28}$
7 " "	$\frac{1}{16}$
8 " "	$\frac{1}{14}$
14 " "	$\frac{1}{8}$
16 " "	$\frac{1}{7}$
28 " "	$\frac{1}{4}$
56 " "	$\frac{1}{2}$
84 " "	$\frac{3}{4}$

**Parts of a Tun of 2240 lbs.**

cwt.	grs.	
1	0	is $\frac{1}{20}$
2	0	are $\frac{1}{10}$
2	2	" $\frac{1}{8}$
4	0	" $\frac{1}{5}$
5	0	" $\frac{1}{4}$
10	0	" $\frac{1}{2}$
15	0	" $\frac{3}{4}$

**Parts of a Year of 12 months.**

1 mo. is	$\frac{1}{12}$
2 mos. are	$\frac{1}{6}$
3 " "	$\frac{1}{4}$
4 " "	$\frac{1}{3}$
5 " "	$\frac{5}{12}$
6 " "	$\frac{1}{2}$
8 " "	$\frac{2}{3}$
9 " "	$\frac{3}{4}$

**Parts of a Cwt. of 100 lbs.**

1 lb. is	$\frac{1}{100}$
5 " "	$\frac{1}{20}$
10 " "	$\frac{1}{10}$
20 " "	$\frac{1}{5}$
25 " "	$\frac{1}{4}$
50 " "	$\frac{1}{2}$
75 " "	$\frac{3}{4}$
80 " "	$\frac{4}{5}$

Fractions in Arithmetic are so made, that if all the parts into which a number is divided are added together, they will just equal that number; as when an apple is cut into parts of various shapes, you can join them together and form the apple again.



## 6. TABLES OF STERLING CURRENCY.

Table of Shillings and Pence.

s.	d.	d.	s.	d.
1	is	12	20	are 1 8
2	are	24	30	" 2 6
3	"	36	40	" 3 4
4	"	48	50	" 4 2
5	"	60	60	" 5 0
6	"	72	70	" 5 10
7	"	84	80	" 6 8
8	"	96	90	" 7 6
9	"	108	100	" 8 4
10	"	120	110	" 9 2
11	"	132	120	" 10 0
12	"	144	130	" 10 10

Table of Shillings and Pounds.

s.	£	s.	s.	£	s.
20	are	1 0	140	are	7 0
30	"	1 10	150	"	7 10
40	"	2 0	160	"	8 0
50	"	2 10	170	"	8 10
60	"	3 0	180	"	9 0
70	"	3 10	190	"	9 10
80	"	4 0	200	"	10 0
90	"	4 10	210	"	10 10
100	"	5 0	220	"	11 0
110	"	5 10	230	"	11 10
120	"	6 0	240	"	12 0
130	"	6 10	500	"	25 0

## 7. TABLE SHOWING THE SHILLINGS AND PENCE

Currency of the principal States of the Union and the British Provinces,  
with its Value in Dollars and Cents.

TABLE.

In Maine,  
" New Hampshire,  
" Vermont,  
" Massachusetts,  
" Rhode Island,  
" Connecticut  
" Virginia,  
" Kentucky,  
" Tennessee,

16 $\frac{2}{3}$  cents are called  
one shilling,  
and six shillings  
make one  
dollar.

In New York,  
" Ohio,  
" North Carolina,

12 $\frac{1}{2}$  cents are called  
one shilling,  
and eight shillings  
make one dollar./

In New Jersey,  
" Pennsylvania,  
" Delaware,  
" Maryland,

13 $\frac{1}{2}$  cents are called  
one shilling,  
and seven shillings  
and sixpence make  
one dollar.

In South Carolina,  
" Georgia,

21 2-5 cents are called  
one shilling,  
and four shillings  
and eight pence  
make one dollar.

In the remaining thirteen States, the cent, dime, and dollar, of Federal money, are generally used.

#### BRITISH PROVINCES.

In Canada East,	}	20 cents are called one shilling, and five shillings make one dollar.
" Canada West,		
" Nova Scotia,		
" New Brunswick		

### 10. TABLE OF ARITHMETICAL SIGNS.

**+** *Plus*, or more, meaning added to. This sign when placed between two numbers, shows that they are to be added together and considered as one number; thus,  $24+36$ ; that is, 24 added to 36, which is read 24 plus 36.

**=** *Æqualitas*, or equality, meaning equal to. This sign when placed between two or more numbers, shows that those which precede the sign are equal to those which follow it; thus,  $24+36=60$ ; that is, 24 added to 36 are equal to 60.

**—** *Minus*, or less, meaning subtracted from. This sign, when placed between two numbers, shows that one is to be taken from the other; thus,  $84-42$ ; that is, 42 is to be subtracted from 84, which is read 84 minus 42.

**×** *Multiplico*, to multiply, meaning multiplied by. This sign placed between two numbers signifies that one is to be multiplied by the other; thus,  $24\times 36$ ; that is, 24 is to be multiplied by 36, which is read 24 multiplied by 36.

**÷** *Divido*, to part, meaning divided by. This sign placed between two numbers shows that one is to be divided by the other; thus,  $60\div 15$ ; that is, 60 is to be divided by 15. When placed horizontally between two numbers, the one above and the other below, the dots are dispensed with; thus,  $\frac{1}{2}$ ; that is, 1 divided by 2.

#### EXAMPLES.

Read the following:  $72+47=119$ ;  $656+809=1465$ ;  $1400+700=2100$ ;  $76-38=38$ ;  $104-26=78$ ;  $290-145=145$ ;  $25\times 12=300$ ;  $99\times 9=891$ ;  $425\times 50=21250$ ;  $64\div 8=8$ ;  $144\div 12=12$ ;  $1728\div 12=144$ ;  $1728+144-576\times 12\div 288=54$ ;  $64\div 8\times 16=128$ ;  $36\times 12=144\times 3$ ;  $500\times 10-300=47\times 90+470$ ;  $4-2\times 6=12$ .

**—** *Vinculum*, or a bond of union, meaning that the numbers over which it is placed, are to be considered as united or one, and to be subjected to the same operation; thus,  $12+13\times 19$ .

$::$  : *Proportio*, or proportion. These signs are placed between numbers to show their relation to each other, so that knowing the relation of two numbers, two others may be found that have the same relation; thus,  $3 : 6 :: 9 : 18$ , which is read as follows: As 3 is to 6 so is 9 to 18, because 3 is the half of 6 and 9 half of 18, therefore the proportion of 3 to 6 is the same as 9 to 18. This sign is read thus: As, is to, so is, to.

$\wedge$  *Potentia*, or power. Every number is a power, and to increase its power you must multiply it by itself the number of times answering to the power to which you wish to raise it. The figure which expresses the power to which another is to be raised is called an exponent or index, which is a small figure placed against its right hand upper part; thus,  $4^3$ ; that is, 4 is to be multiplied three times by itself, or  $4 \times 4 \times 4 = 64$ ; therefore, 64 is the third power of 4, and is the same as  $4^3$ .

$\sqrt{\phantom{x}}$  *Radix*, or root, meaning that the root is to be extracted. The root of a number is such a one as multiplied by itself a given number of times will produce the number whose root is wanted.  $\sqrt{\phantom{x}}$  means the square root,  $^3\sqrt{\phantom{x}}$  the cube root,  $^4\sqrt{\phantom{x}}$  the fourth root,  $^5\sqrt{\phantom{x}}$  the fifth root, &c.; therefore,  $\sqrt{64}$  shows that 8 is wanted, because  $8 \times 8 = 64$ .  $^3\sqrt{64}$  shows that 4 is wanted, because  $4 \times 4 \times 4 = 64$ .  $^4\sqrt{16}$  shows that 2 is wanted, because  $2 \times 2 \times 2 \times 2 = 16$ .  $^5\sqrt{243}$  shows that 3 is wanted, because  $3 \times 3 \times 3 \times 3 \times 3 = 243$ .

## ILLUSTRATIVE EXAMPLES.

### ODD NUMBERS.

Odd numbers begin with 1, and consist of every second following figure; thus, 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, are odd numbers.

Odd numbers  $\times$  by odd numbers = odd numbers.

Odd numbers  $\times$  even numbers = even numbers.

Even numbers  $\times$  even numbers = even numbers.

Even numbers  $+$  even numbers = even numbers.

Odd numbers  $+$  odd numbers = even numbers.

Odd numbers  $+$  even numbers = odd numbers.

Many of the odd numbers above 3 that can only be  $\div 1$ , can be  $\div 6$  by subtracting 1 or adding 1. For instance, 13 can only be  $\div 1$  but  $13 - 1$  may be  $\div 6$ , so with 17, 19, 25, &c.

WHAT IS A TRILLION? a thousand billions; written thus—

**1,000,000,000,000.**

But if you were to count 200 a minute, it would take you 9512 years 34 days 5 hours and 20 minutes to count it, which is nearly twice as long as the world has existed

## THE NUMBER NINE.

The powers of the figure 9 are more numerous and remarkable than those of any other figure.

The figures composing the product of every figure from 1 to 9 multiplied into 9, added together, make NINE; thus—

$\begin{array}{r} 9 \\ 1 \\ \hline 9.9 \\ 2 \\ \hline 18.1+8=9 \end{array}$	$\begin{array}{r} 9 \\ 4 \\ \hline 36.3+6=9 \\ 5 \\ \hline 45.4+5=9 \\ 6 \\ \hline 54.5+4=9 \end{array}$	$\begin{array}{r} 9 \\ 7 \\ \hline 63.6+3=9 \\ 8 \\ \hline 72.7+2=9 \\ 9 \\ \hline 81.8+1=9 \end{array}$
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The above multipliers from 1 to 9 added together=45 and  $4+5=\text{NINE}$ . Their several products added together=405, which  $+9=45$  and  $4+5=\text{NINE}$ . The amount of the first product (9) added to the remaining eight products (eight 9s)=81, and  $8+1=9$  and  $81=9 \times 9$ ; 81 is therefore called the *square* of NINE. The 405 mentioned above  $+81=486$ , and this  $+9=54$ , and  $5+4=\text{NINE}$ . The number of changes that may be rung on 9 bells is 362,880, which figures added together make 27, and  $7+2=\text{NINE}$ . And  $362,880 \div 9=40,320$ , and these figures added together make NINE.

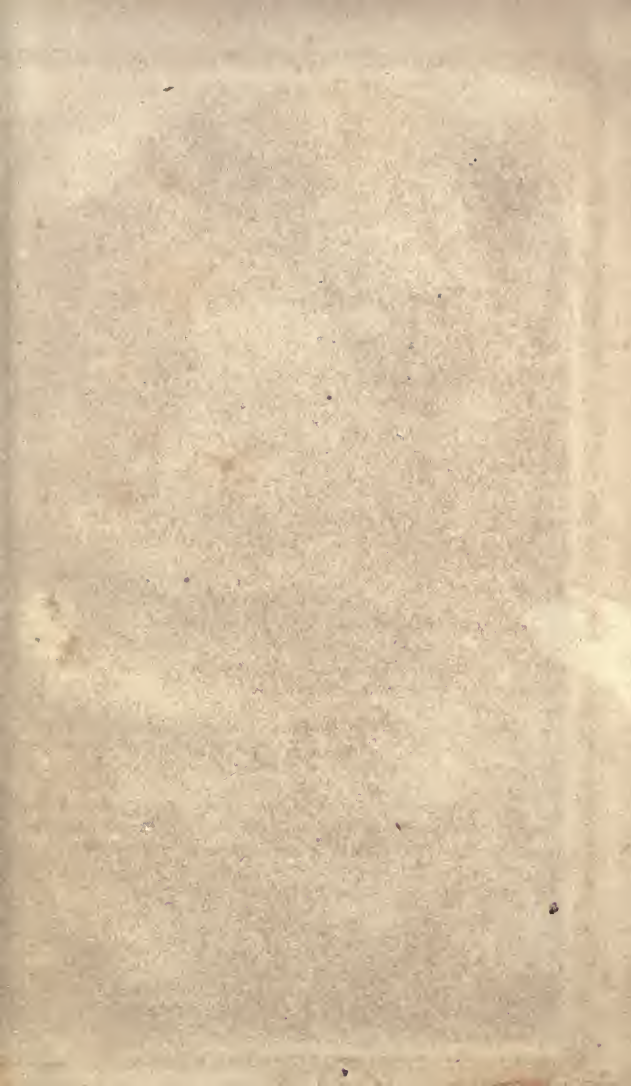
## THE GAME OF CHESS.

Sessa, who invented the game of chess for an East Indian king, was promised in return any reward which he should ask. Understanding, better than his patron, the power of numbers, and wishing to rebuke his rashness, he asked simply for one grain of wheat for the first square on the chess-board, two for the second, four for the third, and so doubling to the sixty-fourth. The king was astonished at the apparent smallness of the gift, but still more so, when told that the number of grains would be 18,446,744,073,709,551,615. There are in a bushel 589,824 grains of wheat, and 18,446,744,073,709,551,615  $\div 589,824$  gives 31,274,997,411,295 bushels; more than the whole surface of the earth could produce in many years, and more in value probably than the whole wealth of the globe. The king, therefore, did not keep his promise!

## GEORGE BIDDER.

This wonderful boy, whose portrait is on the title-page, when very young and uneducated, could solve the most difficult arithmetical questions entirely in his own mind without the use of pencil or slate, and more quickly than any one could in the common way.

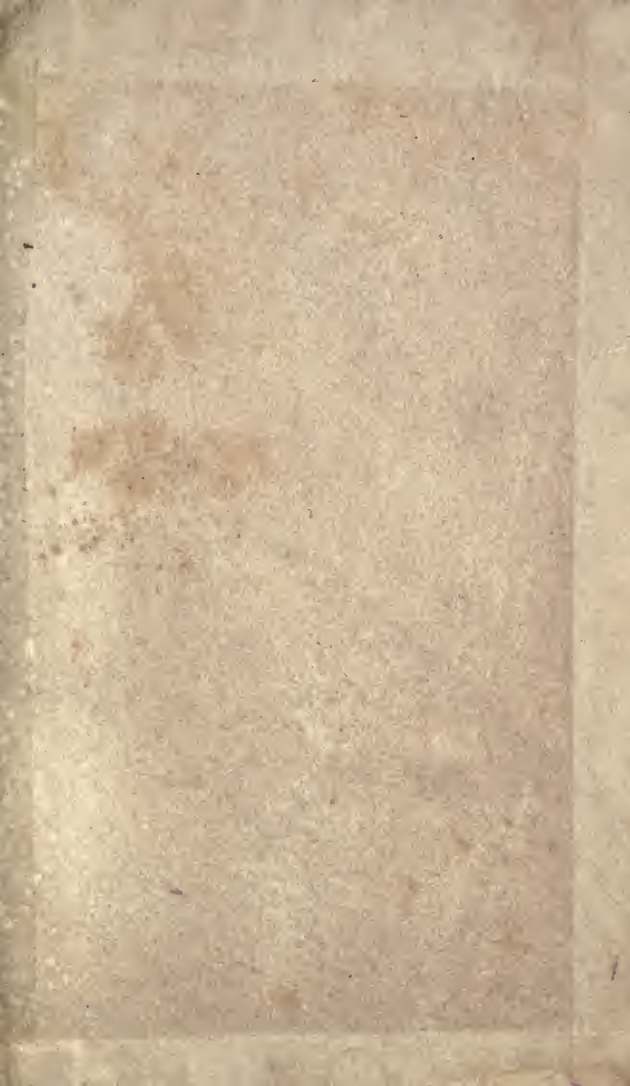




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